



ASQ CRE Prep course

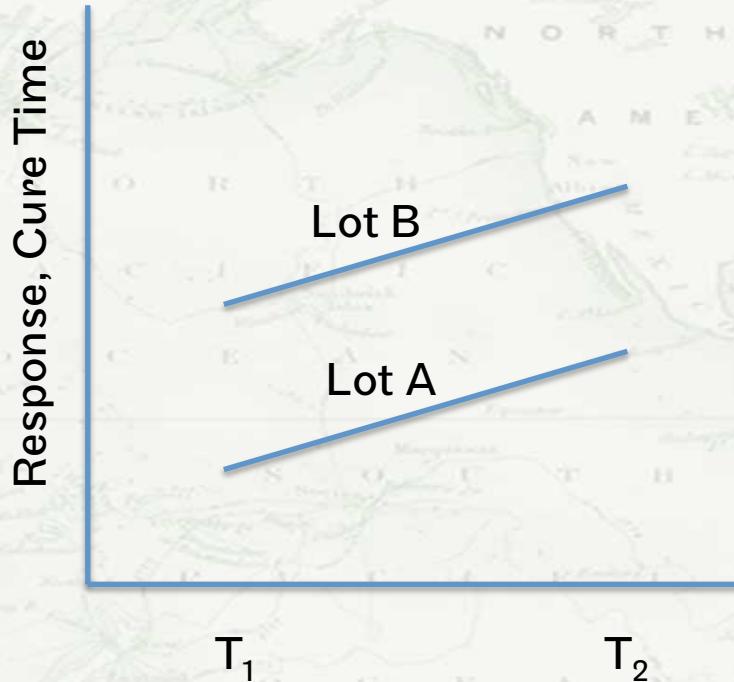
Lesson III. A. 7. g.

Design of Experiments

Interactions & Confounding

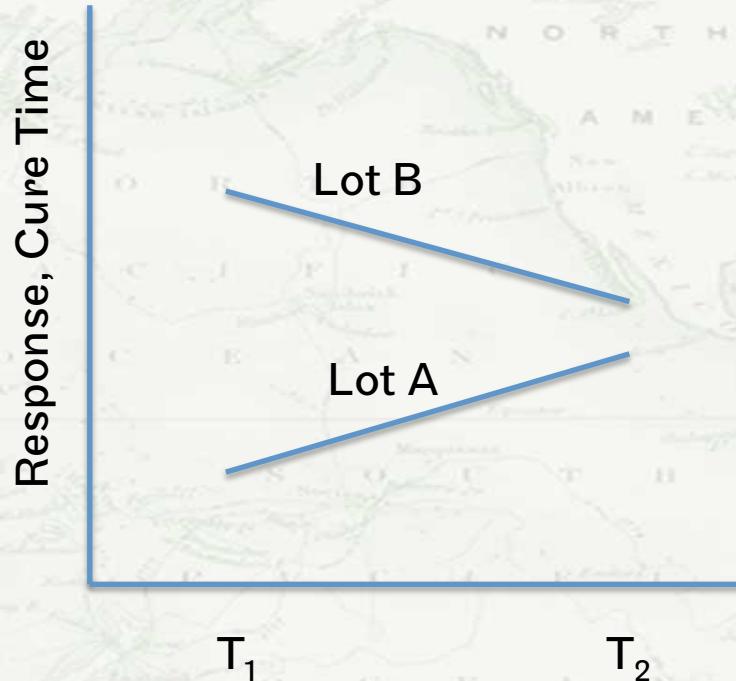
No Interaction

**Cure time vs.
temperature
for an adhesive
experiment**



Interaction

**Add a change in
humidity to the
experiment**



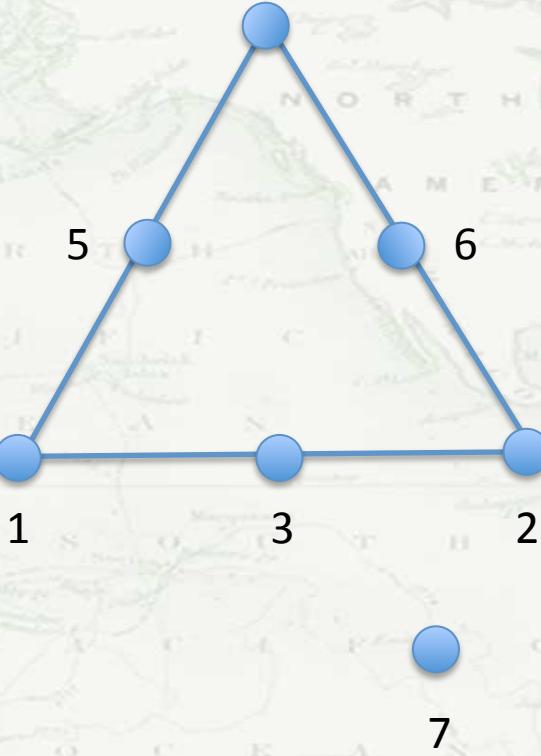
Interactions in the L_4 Array

Run No	A	B	C
1	1	1	1
2	1	2	2
3	2	1	2
4	2	2	1



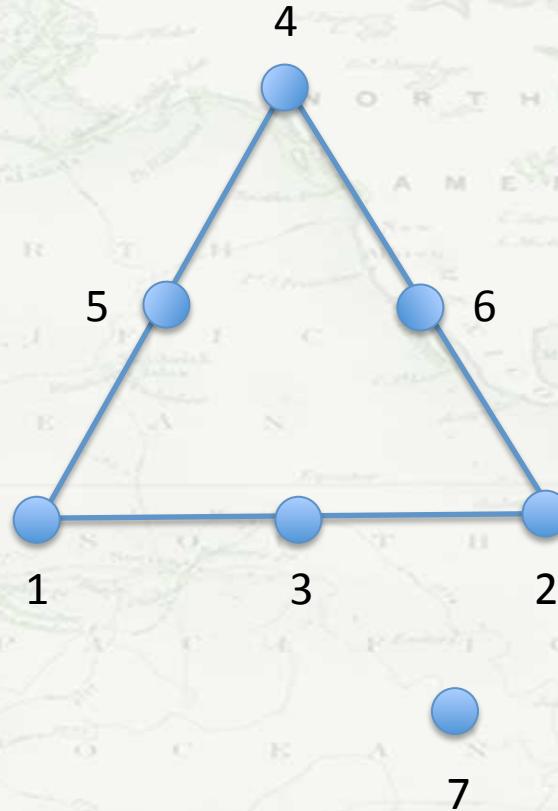
L_8 Linear Graphs ₄

run	1	2	3	4	5	6	7
1	1	1	1	1	1	1	1
2	1	1	1	2	2	2	2
3	1	2	2	1	1	2	2
4	1	2	2	2	2	1	1
5	2	1	2	1	2	1	2
6	2	1	2	2	1	2	1
7	2	2	1	1	2	2	1
8	2	2	1	2	1	1	2



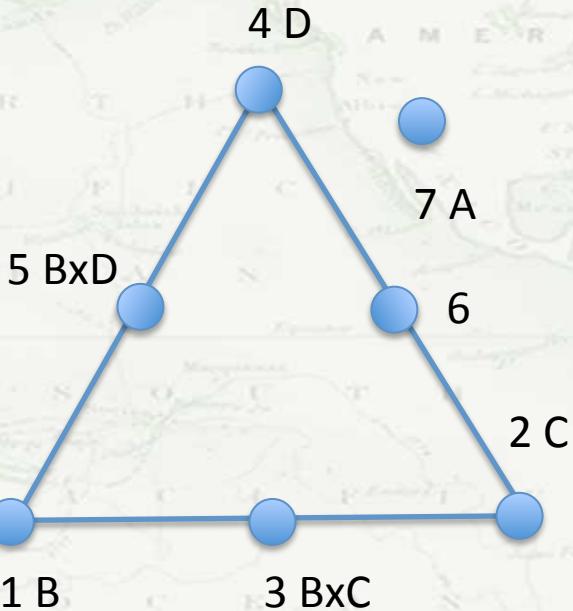
Assigning Factors to an Array

- A, B, C, D factors
- B x C and B x D interact



run	1	2	3	4	5	6	7
1	1	1	1	1	1	1	1
2	1	1	1	2	2	2	2
3	1	2	2	1	1	2	2
4	1	2	2	2	2	1	1
5	2	1	2	1	2	1	2
6	2	1	2	2	1	2	1
7	2	2	1	1	2	2	1
8	2	2	1	2	1	1	2
	B	C	B x D	D	B x C		A

L₈ Column Assignments



Getting this?



ASQ CRE Prep course

Lesson III. A. 7. h.

Design of Experiments

Adjusting the Design